REMARKS

Claims 1-20 were presented for examination. The Office Action dated July 11, 2007 rejects claims 1-20. This paper cancels claim 3. Claims 1, 2, and 4-20 remain pending in the application.

Provisional Double Patenting Rejection

The Office Action provisionally rejects claims 1-20 as being unpatentable over claims 1-20 of co-pending application no. 10/678,812 on the ground of non-statutory obviousness-type double patenting. More specifically, the Office Action indicates that claim 3 (which includes the limitations of claim 1) of the present application conflicts with claim 11 of the co-pending application, and differs from claim 11 only in the nature of the type of information transmitted.

This paper cancels claim 3 to eliminate any perceived conflict of claims between the applications. Applicant thus respectfully submits that the remaining claims of the present application are patentably distinct over the claims of co-pending application no. 10/678,812, and that the provisional rejection has been overcome.

Claim Rejections under 35 U.S.C. § 103

The Office Action rejects claims 1-10 and 20 under 35 U.S.C. 103(a) as being unpatentable over Chi et al. (U.S. Patent No. 6,654,341).

Applicant respectfully traverses this rejection because the Chi does not disclose or suggest transmitting *out-of-band* signals *between cards of a network element*, as set forth in the Applicant's invention.

The Applicant's invention, as set forth in representative independent claim 1, transmits a first out-of-band signal from a first card in a network element to a second card in the network element over a link dedicated to carrying out-of-band signals between the first card and the second card. A second out-of-band signal containing information received by the second card from the first card in the first out-of-band signal is simultaneously transmitted to a plurality of cards in the network element.

Chi discloses a method for distributing identification and availability information about a protection line among switches in a SONET ring network. Unlike the Applicant's invention, however, Chi does not distribute information *between cards of a (i.e., one) network element* over a dedicated out-of-band link. Rather, Chi's distribution occurs over a ring network among switches (i.e., multiple network elements).

Moreover, Chi does not even use *out-of-band* signaling to distribute the protection line information. The Office Action asserts that Chi's K-byte signal is inherently an out-of-band signal because it is dedicated to transfer only signaling information. Applicant respectfully submits, however, that this is an incorrect understanding of the meaning of out-of-band signaling. Paragraph [0022] of the Applicant's specification defines out-of-band signaling as "signaling that occurs independently of or separately from the signaling carrying the data traffic". That this is the generally understood meaning of out-of-band signaling is borne out by Iacovino (US2004/0085954 A1), a secondary reference also cited by the present Office Action: the architecture is referred to as out-of-band because the status information is sent in parallel to the SONET traffic stream, and not within the SONET stream (please see paragraph [0049] of Iacovino).

Chi does not teach or suggest distributing protection line information independently of or separately from the data traffic. To the contrary, Chi teaches distributing the protection line information with the SONET traffic stream by incorporating the information in the K-byte of the SONET overhead. (Please see Chi's Abstract.) Because each STS-1 segment includes payload (i.e., data traffic) and overhead, and the overhead includes the K-byte (col. 2, lines 10-12), Chi's signaling is thus "in-band", not "out-of-band". Because Chi does not disclose or suggest the Applicant's claimed out-of-band signaling, simultaneously transmitted among cards in a network element, Applicant respectfully requests that the rejection be withdrawn.

Independent claim 20 recites similar language, and is therefore patentable for at least those reasons cited in connection with claim 1. With respect to the dependent claims, each depends directly or indirectly from patentable independent claim 1 and incorporates all of its limitations and, therefore, is patentable for at least this reason.

Claim Rejections under 35 U.S.C. § 102

The Office Action rejects claims 11-17 under 35 U.S.C. § 102(b) as being anticipated by Iacovino et al. (U.S. Publication No. 2004/0085954).

Applicant respectfully traverses the rejection because Iacovino does not disclose or suggest transmitting an incoming data signal and an out-of-band signal at the same frame rate used for synchronous data transmission of optical signals, as set forth in the Applicant's claimed invention.

The Applicant's invention, as set forth in independent claim 11, recites a first card that obtains information from an incoming data signal. The incoming data signal is forwarded to a second card at a frame rate used for synchronous data transmission of optical signals. An out-of-band signal containing the information extracted from the incoming data signal is transmitted from the first card to the second card *at this frame rate.* An advantage to using the same frame rate is to enable the network element to use the same internal clock for generating out-of-band signals as used to generate optical signals (please see paragraph [0037] of the Applicant's specification).

Iacovino teaches out-of-band signaling from a line module (520) to a switch module (550). The line module sends out-of-band signals to the switch module over a dedicated proprietary channel (770) in parallel with the traffic flow. The traffic flow comprises STS-48 signals, which is the electrical equivalent to OC-48 optical signals. Iacovino teaches a frame rate for the synchronous data transmission of optical signals of 1 frame every 125 us (please see paragraph [0044]).

Iacovino, however, does not teach or suggest transmitting the out-of-band signal at this frame rate. This is illustrated by an exemplary data rate provided by Iacovino, indicating that the dedicated proprietary channel operates at 19MHz (please see paragraph [0046]). At this data rate, transmitting 192 STS-1 status information bytes from the line module to the switch module takes approximately 80 us (presuming each of the 16 line modules transmits 4 STS-48 streams *48 bytes/stream *8 bits/byte /19Mbps, as suggested by FIG. 5 and FIG. 6). Thus, if the transmission of 192 status bytes can even be considered a frame, which is not disclosed or taught by Iacovino, the "frame rate" for transmitting these bytes (i.e., 80 us) is considerably faster than the optical frame rate (125 us).

Granted, by indicating that 19MHz is an example, Iacovino is suggesting that other data rates may be used. However, merely suggesting that other data rates may be used is not sufficiently specific to disclose or suggest the use of an out-of-band frame rate that is the same as the frame rate used for synchronous data transmission for optical signals, as set forth in the Applicant's claimed invention. If anything, Iacovino might be seen to suggest the use of a frame rate that is faster than the optical frame rate (i.e., perhaps to enable the switch module to make a timely choice of which STS-1 signal to use – please see paragraph [0048], in which Iacovino states that the selection process is performed every 125 us). Applicant, therefore, respectfully submits that Iacovino does not disclose or suggest all elements and limitations of the Applicant's claimed invention and, thus, cannot anticipate or render obvious the Applicant's invention. Applicant respectfully requests that the rejection be withdrawn.

With respect to the dependent claims, each depends directly or indirectly from patentable independent claim 11 and incorporates all of its limitations and, therefore, is patentable for at least this reason.

Rejection of Claim 19 under 35 U.S.C. § 103

The Office Action also rejects claims 19 under 35 U.S.C. 103(a) as being unpatentable over Iacovino in view of Chi. Claim 19 depends from patentable independent claim 11 and incorporates all of its limitations and, therefore, is patentable for at least this reason.

CONCLUSION

In view of the amendments and arguments made herein, Applicant submits that the application is in condition for allowance and requests early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicant's representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-0932.

Respectfully submitted,

Date: October 8, 2007
Reg. No. 41,274

/Michael A. Rodriguez/
Michael A. Rodriguez
Attorney for Applicant

Guerin & Rodriguez, LLP
5 Mount Royal Avenue
Marlborough, MA 01752

Tel. No.: (508) 303-0932
Fax No.: (508) 303-0005